

LISTING OF THE CLAIMS

Claim 1 (original): A system for monitoring activity along an area bounded by a wire, said system comprising:

a single conductor wire defining a boundary around an area;

at least one sensor in communication with said wire, said at least one sensor for measuring local activity as a measured local activity signal and transmitting said measured local activity signal through said wire;

a gateway electrically connected to said wire, said gateway for managing transmissions through said wire;

a digital signal processing device in electrical communication with said gateway, said digital signal processing device for applying a digital filter to each said measured local activity signal to produce a filtered activity signal;

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a processing device in electrical communication with said gateway and said digital signal processing device; said processing device for sequencing operation of said monitoring system, communicating with said at least one sensor, and identifying said filtered activity signal to produce an activity identification;

a power supply providing power to said system, said power supply electrically connected to said gateway for transmitting power through said wire to said sensors; and

an indicator responsive to said processing device for communicating said activity identification.

Claim 2 (original): The system of Claim 1 further comprising an external interface in communication with said processing device, said external interface configured for interfacing the monitoring system with a conventional residential and light commercial security system.

Claim 3 (original): The system of Claim 1 further comprising a signal generator for generating an electromagnetic signal, said signal generator being electrically connected to a transmitter for transmitting said electromagnetic signal through said wire, said transmitter electrically connected to said gateway, said electromagnetic signal broadcast from said wire such that a receiving device responsive to said

electromagnetic signal provides a corrective stimulus to a pet wearing said receiving device when the pet approaches said wire.

Claim 4 (original): The system of Claim 1 wherein each said at least one sensor is individually addressable.

Claim 5 (original): The system of Claim 1 wherein said at least one sensor is selected from the group consisting of at least seismic, infrared, and audio sensors.

Claim 6 (original): The system of Claim 1 wherein said at least one sensor comprises a sensor power source, an activity measuring device, a transceiver, and a communication interface.

Claim 7 (original): The system of Claim 6 wherein said communication interface is a transformer electrically coupled to said wire.

Claim 8 (original): The system of Claim 6 wherein said communication interface includes an antenna oriented vertically with respect to said wire and wherein each **said** at least one sensor is located near but not directly over said wire and a ferrite core antenna electrically connected to said transceiver.

Claim 9 (original): The system of Claim 6 wherein said transceiver includes a tuner electrically connected to said communication interface for tuning said transceiver to a predetermined frequency, an amplifier electrically connected to said communication interface for converting signals received from said communication interface into logical ones and zeros, a processing device electrically connected to said amplifier, said activity measuring device, and said power supply for interpreting said logical ones and zeros, and a driver electrically connected to said processing device and said communication interface for sending a measured activity signal obtained from said activity measuring device through said communication interface.

Claim 10 (currently amended): A system for monitoring activity along an area bounded by a wire, said system comprising:

a single conductor wire defining a boundary around an area;

at least one sensor in communication with said wire, said at least one sensor for measuring local activity as a measured local activity signal and transmitting said measured local activity signal through said wire;

a gateway electrically connected to said wire, said gateway for managing transmissions through said wire;

a comparison device in electrical communication with said gateway, said comparison device for comparing said measured local activity signal to at least one reference signal and producing a comparison result;

a processing device in electrical communication with said gateway and said comparison device; said processing device for sequencing operation of said monitoring system, communicating with said at least one sensor, and identifying said comparison result to produce an activity identification;

a power supply for providing power to said ~~monitoring~~ system, said power supply electrically connected to said gateway for transmitting power through said wire to said sensors; and

an indicator responsive to said processing device for communicating the comparison result with an operator.

Claim 11 (currently amended): The system of Claim 10 further comprising a memory device in electrical communication with said comparison device for storing said at least one reference signal;

Claim 12 (original): The system of Claim 10 wherein each said at least one sensor is individually addressable.

Claim 13 (original): The system of Claim 10 further comprising a signal generator for generating an electromagnetic signal, said signal generator being electrically connected to a transmitter for transmitting said electromagnetic signal through said wire, said transmitter electrically connected to said gateway, said electromagnetic signal broadcast from said wire such that a receiving device responsive to said electromagnetic signal provides a corrective stimulus to a pet wearing said receiving device when the pet approaches said wire.

Claim 14 (original): The system of Claim 10 wherein said at least one sensor is selected from the group consisting of at least seismic, infrared, and audio sensors.

Claim 15 (original): The system of Claim 10 further comprising an external interface in communication with said processing device, said external interface configured for interfacing the monitoring system with a conventional residential and light commercial security system.

Claim 16 (original): The system of Claim 10 wherein said at least one sensor comprises a sensor power supply, an activity measuring device, a transceiver, and a communication interface.

Claim 17 (original): The system of Claim 16 wherein said communication interface is a transformer electrically coupled to said wire.

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Claim 18 (original): The system of Claim 16 wherein said communication interface includes an antenna oriented vertically with respect to said wire and wherein each **said** at least one sensor is located near but not directly over said wire and a ferrite core antenna electrically connected to said transceiver.

Claim 19 (original): The system of Claim 16 wherein said transceiver includes a tuner electrically connected to said communication interface for tuning said transceiver to a predetermined frequency, an amplifier electrically connected to said communication interface for converting signals received from said communication interface into logical ones and zeros, a processing device electrically connected to said amplifier, said activity measuring device, and said power supply for interpreting said logical ones and zeros, and a driver electrically connected to said processing device and said communication interface for sending a measured activity signal obtained from said activity measuring device through said communication interface.
